

**REMARKS/ARGUMENTS**

Claims 1-7, 9-20, and 22-25 are pending in the present application. Claims 8 and 21 have previously been cancelled. Claims 1 and 16 are independent claims

**Art Rejections**

Claims 1-4, 6, 7, 9-19 and 22-25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Terahara (USP 6,535,309) in view of Barnard (USP 6,219,162). Claims 5 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Terahara, Barnard and further in view Xiao (U.S. Patent Publication No. 2002/0101636 A1). These rejections, insofar as they pertain to the presently pending claims, are respectfully traversed.

The Office Action admits that Terahara does not disclose "where said gain element having a gain profile substantially matching a gain profile of the signal input to the add/drop module." (see page 3, first full paragraph of Office Action).

First of all, Applicants agree with Office Action's admission in that Terahara certainly does not disclose the claimed gain element having a gain profile substantially

matching a gain profile of the signal input to the add/drop module.

Applicants also point out, however, that claim 1 particularly as amended recites more than this feature.

In terms of claim 1, Barnard certainly does not disclose or suggest the gain element having a gain profile substantially matching a gain profile of the signal input to the add/drop module. Recall this the claimed gain element is optically coupled to the add/drop module and to an add channel port and receives at least one channel to be added. Thus, this gain profile element is claimed as having a gain profile substantially matching a gain profile of the input signal that is input to the add/drop module. No such gain profile matching between the gain element on the add path and the input signal input to the add/drop module is disclosed or suggested by Barnard. Indeed, Barnard is totally focused upon equalizing the BER for the various channels of the WDM signal and has no concept, teaching, or suggestion of gain profile matching, particularly between a gain element on the add path and the gain profile of a signal input to the add/drop module.

In terms of claim 16, Barnard also failed to disclose or suggest the method of power balancing a WDM signal as claimed therein. More specifically, Barnard does not disclose or suggest

substantially matching a gain profile of the add path with a gain profile of a signal input to the add/drop module. Such gain profile matching, again, is a concept entirely absent from Barnard and all of the art of record.

Although Barnard is applied to teach these features, a closer examination of Barnard will reveal that this patent is insufficient to reject these features.

Barnard is actually directed to equalizing WDM systems. More specifically, and as discussed in column 3, line 42 through column 4, line 3, the entire purpose of Barnard is to equalize the bit error rate (BER) for all channels. This is seen by Barnard as being preferable to equalizing opticals to signal noise ratio (OSNR). In other words, the goal of Barnard is to equalize the BER values for each of the channels in a WDM system.

To accomplish this BER equalization purpose, Barnard utilizes a network set-up procedure which is as follows. During initial set-up of the WDM system, the optimum transmitter launch power for all channels is determined by utilizing a performance monitoring (network monitoring unit 24) that monitors the BER value. In this way, the optimum launch power for each of the channels of Barnard system so as to equalize the BER for each channel.

Nowhere does Barnard disclose or suggest gain profile matchings. More particularly, nowhere does Barnard disclose or suggest matching the gain profiles of the input optical amplifier and the gain element (on the add path for the added channels).

The cited sections of Barnard certainly do not teach or suggest the gain profile matching particularly as claimed, (see column 1, lines 40-50 and column 11, lines 5-15) sections of Barnard cited by the Office Action actually discuss the equalization of the BER between channels by adjusting the transmitter powers. This is quite a substantially different procedure that is not disclosing or suggesting of the optical amplifier input optical amplifier and add path gain element profile matching that is now more particularly recited in the independent claims.

Indeed, the Office Action admits that Terahara does not disclose that the gain element has a gain profile substantially matching the gain profile of the input signal. Certain sections of Barnard (column 1, lines 40-50 and column 11, lines 5-15) are cited as teaching these features, but they certainly do not. These sections of Barnard are clearly directed to equalizing the BER for multiple channels which is a concept entirely distinct

from and not suggestive of gain profile matching between the add path and the input signal.

Moreover, Xiao also fails to remedy any of the noted deficiencies in the base combination of Terahara and Barnard. While Applicants do not necessarily agree with the statements in relation to Xiao, Applicants wish to focus the patentability of the present invention upon the independent claims 1 and 16. As such, Xiao fails to remedy any of the noted deficiencies in the base combination. Indeed, Xiao is merely applied to teach the certain features of dependent claims 5 and 20 and cannot be applied in any fashion to teach or suggest the features of the independent claims, particularly the gain profile matching features emphasized above and as recited in the independent claims 1 and 16.

For all of the above reasons, taken alone or in combination, Applicants respectfully request reconsideration and withdrawal of the art rejections.

### Conclusion


In view of the above amendments and remarks, reconsideration of the rejections and allowance of all of the claims are respectfully requested.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Michael R. Cammarata (Reg. No. 39,491), at the telephone number of (703) 205-8000, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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